

## NEW RECORDS OF SOUTH AMERICAN PELORIDIIDAE (HOMOPTERA: COLEORRHYNCHA)

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### ABSTRACT

New records are given for seven Chilean species of Peloridiidae and the published information on South American species is summarised. The new material extends the known range of South American peloridiids considerably to the North. Distribution patterns of South American peloridiids are briefly discussed.

### RESUMEN

Se indican nuevos registros para siete especies de Peloridiidae y se resume la información bibliográfica existente acerca de las especies sudamericanas. El material estudiado amplía hacia el Norte, considerablemente, el rango geográfico, hasta ahora conocido, de los peloridiidos sudamericanos. Se discute brevemente los modelos de distribución de los peloridiidos sudamericanos.

### INTRODUCTION

Peloridiids are small, flattened bugs which live in moist moss (Figs. 1, 2). Evans (1981) recognised 25 species in 13 genera. The group is restricted to the Southern hemisphere showing a typical antarctic distribution similar to that of Southern Beech (*Nothofagus*, Betulaceae). Most of the biotopes in which these bugs occur are temperate and subantarctic rain forests. Peloridiids are rarely collected as special techniques are required sample them. Many species are known from a single or few localities only, and little is known of their distributions.

The South American fauna comprises to date the three monotypic genera *Peloridium*, *Pantinia* and *Kuscheloides*, as well as *Peloridora* with three species (China, 1962; Evans, 1981; Cekalovic, 1986). *Peloridium hammoniorum* and *Peloridora kuscheli* are known from several localities whereas the remaining species are recorded only from the type locality.

During a two months expedition to Chile in December 1990 and January 1991, where particular emphasis on collecting forest litter dwelling arthropods was given, we found seven species of Peloridiidae represented by over 560 specimens. A list of the recorded and new localities of all South American species is given below. A taxonomic treatment of the material will be published elsewhere.

### MATERIAL AND METHODS

All the specimens were extracted from sifted leaf litter samples using "Winkler/Moczarski" electors (Besuchet *et al.*, 1987). Unless stated otherwise, the material was collected by both authors (IX and X Regions) or by the senior author (XII Region) and is deposited in the Muséum d'Histoire naturelle, Geneva, Switzerland (MHNG), and the Museo Nacional de Historia Natural, Santiago, Chile (MNNC). Types from the Natural History Museum, London, U.K. (BMNH) were studied.

### LIST OF SPECIES

*Peloridium hammoniorum* Breddin  
(Fig. 1)

Distribution. Recorded from Chile: XI Region, Province Aisen (Coyhaique); XII Re-

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gion, Province Magallanes (Punta Arenas, Seno Otway), Province Antártica Chilena (Isla Navarino, Isla Bertrand); and Argentina: Chubut (V. del Lago Blanco) (China, 1962, all records published up to this date are summarised here; Cekalovic, 1986). The record of Peloridiidae from Chile: XII Region, Province Ultima Esperanza (Río Rubens, Monte Alto) by Lanfranco (1977) probably concerns *Peloridium hammoniorum*.

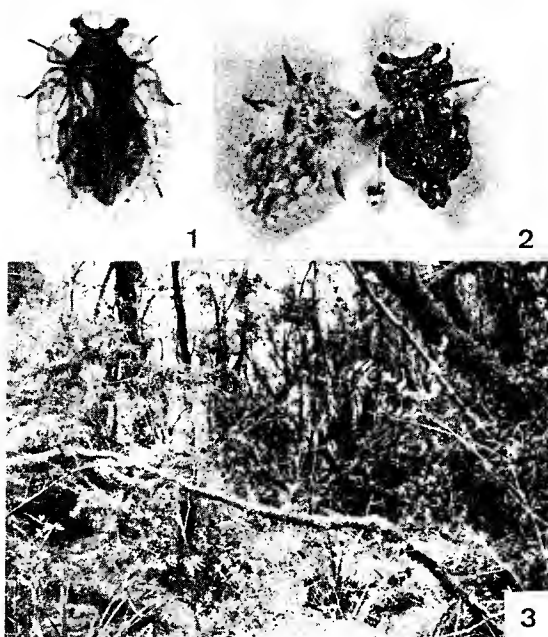
Material examined. Chile: 1 damaged adult, IX Region, Province Malleco, Parque Nacional Nahuelbuta, near "Administración", 37°50'S 73°00'W, 1.100 m, 14-17.XII.1990, mixed *Nothofagus* forest with *Araucaria* along river, and pasture with shrubs, sifting of vegetational debris and moss; 1 ♂, IX Region, Province Cautín, Parque Nacional Huerquehue, between "Administración" and Lago Chico, 39°08'-10'S 71°44'W, 800-900 m, 22-24.XII.1990, *Nothofagus dombeyi*-conifer forest, sifting of vegetational debris and moss; 1 ♀, 2 larvae, XII Region, Province Ultima Esperanza, Parque Nacional Torres del Paine. Lago Grey, 100 m, 12.I.1991, *Nothofagus antarctica* forest, sifting of vegetational debris and moss; 4 larvae, XII Region, Province Ultima Esperanza, Monte Alto, 52°05'S 71°55'W, 180 km NNW Punta Arenas, 400 m, 15.I.1991, *Nothofagus pumilio* forest, sifting of vegetational debris and moss; 3, larvae, XII Region, Province Magallanes, Reserva Nacional Parrillar, 53°19'S 71°10'W, 300 m, 17.I.1991, *Nothofagus betuloides* forest, sifting of vegetational debris.

Comment. China (1962) mentioned that the specimen from Chubut may not be conspecific with *Peloridium hammoniorum*. The present material is insufficient to decide whether there are any differences between the material from the IX and X Regions and that of the XI and XII Regions.

*Peloridora kuscheli* China

(Fig. 2)

Distribution. Recorded from Chile: IX Region, Province Cautín (Lago Caburgua); X Región, Province Llanquihue (lake Llanquihue, Frutillar, 15 km west of Frutillar, Vol-



Figures. 1, 2. Peloridiidae from Huerquehue National Park. 1, *Peloridium hammoniorum*; 2, left *Pantinia darwini*, right *Peloridora kuscheli*.

Figure. 3. Temperate rain forest in Chiloé, Cucao.

cán Calbuco), Province Valdivia (Lago Calafquén), Province Chiloé (Chepu); XI Region, Province Aisén (mountain in the region of Coyhaique, Puerto Chacabuco) (China, 1962; Cekalovic, 1986).

Material examined. Chile: 1 ♂, 6 larvae, IX Region, Province Malleco, Parque Nacional Nahuelbuta, near "Administración", 37°50'S 73°00'W, 1.100 m, 14-17.XII.1990, mixed *Nothofagus* forest with *Araucaria* along river, and pasture with shrubs, sifting of vegetational debris and moss; 4 ♂, 3 ♀, 88 larvae, IX Region, Province Cautín, Parque Nacional Huerquehue, between "Administración" and Lago Chico, 39°08'-10'S 71°44'W, 800-900 m, 22-24.XII.1990, *Nothofagus dombeyi*-conifer forest, sifting of vegetational debris and moss; 3 ♂, 3 ♀, X Region, Province Osorno, Parque Nacional Puyehue, Aguas Calientes, 40°40'S 72°20'W, 400-500 m, 31.XII.1990-1.I.1991, Valdivian lauriphyllous forest along river, sifting of vegetational and alluvial debris, and moss. Chile: 1 ♂, X Region, Province Llanquihue, Frutillar, 300 m, 23.IX.1954, in soil (G. Kuschel) (BMNH).

*Peloridora minuta* China

Distribution. Recorded from Chile: X Region, Province Valdivia (El Mirador) (China, 1962).

Material examined. Chile: 13♀, 10♂, X Region, Province Osorno, Parque Nacional Puyehue, Aguas Calientes, 40°40'S 72°20'W, 400-500 m, 31.XII.1990-1.I.1991, Valdivian lauriphyllous forest along river, sifting of vegetational and alluvial debris, and moss; 5♂, 6♀, 22 larvae, X Region, Province Osorno, Parque Nacional Puyehue, Aguas Calientes to Antillanca, 40°45'S 72°15'-20'W, 800 m, 2.I.1991, mixed *Nothofagus* forest with bamboo, sifting of vegetational debris and moss. Chile: holotype ♂ of *P. minuta*, X Region, Province Valdivia, El Mirador, 1.600 m, 5.I.1957, in soil (G. Kuschel) (BMNH).

*Peloridora holdgatei* China

Distribution. Recorded from Chile: X Region, Province Chiloé (Cerro San Pedro) (China, 1962).

Material examined. Chile: 59♂, 57♀, 89 larvae, X Region, Province Chiloé, Cucao, 30 km SW Castro, Parque Nacional Chiloé, near "Administración", 42°37'S 74°08'W, 30 m, 4-6.I.1991, degraded temperate rain forest, sifting vegetational debris and moss; 1♀, 1 larva, X Region, Province Chiloé, Parque Nacional de Chiloé, Rancho Grande, near Cucao, 42°33'S 74°02'W, 300-600 m, 4.I.1991, open mixed *Fitzroya* forest and peat bog, sifting of vegetational debris and moss. Chile: paratypes 1♂, 1♀ of *P. holdgatei*, X Region, Province Chiloé, Cerro San Pedro, 600 m, 8.XI.1958 (G. Kuschel, Royal Soc. Exped.) (BMNH).

*Peloridora* spp.

Material examined. Chile: 138 larvae: X Region, Province Osorno, Parque Nacional Puyehue, Aguas Calientes, 40°40'S 72°20'W, 400-500 m, 31.XII.1990-1.I.1991, Valdivian lauriphyllous forest along river, sifting of vegetational and alluvial debris, and moss.

Comment. So far no characters could be found to determine *Peloridora* larvae to species. As both *P. kuscheli* and *minuta* were found at this locality the larvae cannot be associated with adults.

*Pantinia darwini* China

(Fig. 2)

Distribution. Recorded from Chile: X Region, Province Chiloé (Chepu) (China, 1962).

Material examined. Chile: 3♂, IX Region, Province Cautín, Parque Nacional Huerquehue, between "Administración" and lago Chico, 39°08'-10'S 71°44'W, 800-900 m, 22-24.XII.1990, *Nothofagus dombeyi*-conifer forest, sifting of vegetational debris and moss; 1♀, X Region, Province Chiloé, Cucao, 30 km SW Castro, Parque Nacional de Chiloé, near "Administración", 42°37'S 74°08'W, 30 m, 4-6.I.1991, degraded temperate rain forest, sifting of vegetational debris and moss. Chile: holotype ♂, paratypes 1♂, 1♀, X Region, Province Chiloé, Chepu, 42°S, 4-11.X.1958 (G. Kuschel, Royal Soc. Exped.) (BMNH).

*Pantinia* sp.

Material examined. Chile: 3♂, 2♀, IX Region, Province Malleco, Parque Nacional Nahuelbuta, near "Administración", 37°50'S 73°00'W, 1.100 m, 14-17.XII.1990, mixed *Nothofagus* forest with *Araucaria* along river, and pasture with shrubs, sifting of vegetational debris and moss.

Comment. The species differs from *P. darwini* in the shape of the apical process of the pygophor, the more pointed apical edges of the pygophor, the more broadened parameres, and the different shape of the aedeagus.

*Kuscheloides edenensis* (China)

Distribution. Recorded from Chile: XII Region, Province Última Esperanza (Isla Wellington).

## Gen. sp.

Material examined. Chile: 1♂, X Region, Province Chiloé, Parque Nacional de Chiloé, Rancho Grande, near Cucao, 42°33'S 74°02'W, 300-600 m, 4.I.1991, open mixed *Fitzroya* forest and peat bog, sifting of vegetational debris and moss.

Comment. Based on the presence of a narrow cell between Cul+2 and Pcu on the tegmen and the parallel sided, apically truncate scutellum the species is related to *Kuscheloides*, *Peloridora* and *Pantinia*. It differs from all

three in the reticulate paranota which are without veins in *Kuscheloides*, and with two veins in *Pelorida* and *Pantinia*.

#### Unidentified larvae

Material examined. Chile: 6, larvae, IX Region, Province Malleco, Parque Nacional Nahuelbuta, near "Administración", 37°50'S 73°00'W, 1.100 m, 14-17.XII.1990, mixed *Nothofagus* forest with *Araucaria* along river, and pasture with shrubs, sifting of vegetational debris and moss; 24 larvae, IX Region, Province Cautín, Parque Nacional Huerquehue, between "Administración" and Lago Chico, 39°08'-10'S 71°44'W, 800-900 m, 22-24.XII.1990, *Nothofagus dombeyi*-conifer forest, sifting of vegetational debris and moss.

Comments. So far no differences could be found between the larvae of *Peloridium* and *Pantinia*, so that the listed material cannot be attributed to any of the genera.

#### CONCLUSIONS

The distribution of the South American peloridiids is summarised in Fig. 4, *Peloridium hammoniorum* is the most widely distributed species occurring from Nahuelbuta National Park in the North to Isla Navarino in the South. It is the only species which has been found outside Chile (Argentina: Chubut). *Pelorida kuscheli* covers also a fairly large area which ranges from Nahuelbuta National Park in the North to the region of Coyhaique in the South. The other species are more restricted in distribution.

The material from the Nahuelbuta National Park is interesting as it extends the known range of South American peloridiids considerably to the North. In several localities more than one species were found together, and, in particular, in the Puyehue National Park, two congeneric species (*Pelorida kuscheli* and *minuta*) were collected. This indicates that at a local scale geographical vicariance may have been of minor importance as impetus to diversification.

The area in which peloridiids occur corresponds well with Pisano's (1966) zone of hygromorphic plant associations, and Schmithüsen's (1956) region of evergreen temperate rain forests. The region with lauriphyllous



Figure. 4. Known distributions of South American Peloridiidae.

evergreen rain forests between Temuco and Chiloé (Fig. 3) has the largest diversity with 6 species of Peloridiidae. This area corresponds more or less with Di Castri's (1968) "oceanic region with mediterranean influence".

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